

**SEMICONDUCTOR DEVICE**

Patent Number: JP5283460  
Publication date: 1993-10-29  
Inventor(s): SHIMIZU MITSU HARU  
Applicant(s): SHINKO ELECTRIC IND CO LTD  
Requested Patent: ☐ JP5283460  
Application Number: JP19920109334 19920402  
Priority Number(s):  
IPC Classification: H01L21/60; H01L21/56; H01L23/28  
EC Classification:  
Equivalents:

**Abstract**

**PURPOSE:** To obtain a compact semiconductor device by eliminating the need of an outer lead section extruding from a resin or package and a thick resin or package bottom wall covering the lower section of a semiconductor chip.

**CONSTITUTION:** A lead pattern 20 is formed on the upper surface of an insulating base film 10. A semiconductor chip 40 is sealed with a resin 60 on a base film 10. The middle section of the lead pattern 20 is exposed at the bottom of a through hole formed through the film 10 and solder bumps 30 are formed on the exposed section of the pattern 20 so that the bumps 30 can be extruded downward. Then the pattern 20 is connected to the connection pads of a substrate by using the bumps 30.

Data supplied from the esp@cenet database - I2